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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/530,275	04/05/2005	Yusuke Mitari	00862.103995.	3631

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EXAMINER	
SAINT CYR, LEONARD	
ART UNIT	PAPER NUMBER
2626	
MAIL DATE	DELIVERY MODE
02/03/2010	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/530,275	MITARI ET AL.	
	Examiner	Art Unit	
	LEONARD SAINT CYR	2626	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *22 December 2009*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1, 3 - 18* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1, 3 - 18* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *04/05/05* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 12/22/09 has been entered.

Response to Arguments

2. Applicant's arguments filed 12/22/09 have been fully considered but they are not persuasive.

Applicants argue that neither Mori et al., nor Matsugu et al., (775) nor Matsugu et al (537) teach activation step of selectively activating at least one extraction module from among a plurality of extraction modules for extracting features of respective, whose calculated likelihood of the category for the feature of the second layer to be extracted from the input data is not less than a predetermined value; extracting a feature of the second layer from the input data by the selectively activated extraction module (Amendment, pages 8 – 11).

The examiner disagrees, and points out that claim limitation is rejected over Matsugu et al., (775) in view of Matsugu et al., (537). Matsugu et al., (537) is used to

teach activation step of selectively activating at least one extraction module from among a plurality of extraction modules for extracting features of respective; extracting a feature of the second layer from the input data by the selectively activated extraction module **by disclosing** that "**the channel activation control circuit (extraction module) or the gating circuit calculates a target channel activation degree or selects a channel from the time shared channel data. The features detection layers and the feature integration layers form a set of processing channels at a plurality of resolutions or scale levels as a whole.** Each processing channel implements processing at one scale level or resolution **to detect and recognize low- to high-order features"** (paragraphs 182, 183, and 267, lines 1, and 2).

Matsugu et al., (775) is used to teach calculated likelihood of the category for the feature of the second layer to be extracted from the input data is not less than a predetermined value by disclosing that **"the feature detection layers are connected (interconnected)** so that the feature detection layers can receive the outputs from the cells, belonging to the same channels in the feature consolidation layer at the preceding stage. In a case **where the local area recognition module detects, in a local area, a high-order pattern with an output level higher than a predetermined threshold value, the local area recognition module outputs information of the category (detection probability or detection likelihood) and position information of an object detected in that local area"** (paragraphs 53, and 68).

Therefore, the combination of Matsugu et al., (775) and Matsugu (537) teaches all parts of the limitation.

Claim Rejections - 35 USC § 103

3. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

4. Claims 1, 3-7, 9 - 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mori et al.(US PAP 2002/0181765) in view of Matsugu (US PAP 2002/0181775), and further in view of Matsugu (EP 1164537).

Regarding claims 1, 13 and 14 Mori et al. discloses a pattern identification method of identifying a pattern of input data by hierarchically extracting features of the input data, comprising:

using a processor to perform (paragraph 11) the step:

a first feature extraction step of extracting a feature of a first layer from the input data (see para [0056]);

an analysis step of analyzing a distribution of a feature extraction result in the first feature extraction step (see para [0053]);and

a second feature extraction step of extracting a feature of a second layer (see para [0057]).

However, Mori et al., do not specifically teach calculating a respective likelihood of extracting from the input data a feature of one of a plurality of categories for features of a second layer, each feature of the second layer corresponding to a combination of features of a first layer on a basis of an analyzed distribution of in the analysis step; an activation step of selectively activating at least one extraction module from among a

plurality of extraction modules for extracting features of respective categories, whose calculated likelihood of the category for the feature of the second layer to be extracted from the input data is not less than a predetermined value; extracting a feature of the second layer from the input data by the selectively activated extraction module; and a storing step of storing the extracted feature of the second layer in a memory.

Matsugu (775) teaches **the feature detection layers are connected (interconnected)** so that the feature detection layers can receive the outputs from the cells, belonging to the same channels in the feature consolidation layer at the preceding stage. In a case **where the local area recognition module detects, in a local area, a high-order pattern with an output level higher than a predetermined threshold value, the local area recognition module outputs information of the category (detection probability or detection likelihood) and position information of an object detected in that local area** (paragraphs 53, and 68). **A memory 43 for storing data (e.g., template pattern data) representing a category of a high-order pattern** (paragraph 62, lines six lines).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to interconnect feature detection layers as taught by Matsugu (775) in Mori et al., because that would help efficiently perform recognition using a small-scale circuit for detecting (recognizing) pattern a predetermined category (paragraph 13).

However, Mori et al., in view of Matsugu (775) do not specifically teach an activation step of selectively activating at least one extraction module from among a

plurality of extraction modules for extracting features of respective categories; extracting a feature of the second layer from the input data by the selectively activated extraction module.

Matsugu (537) discloses that **the channel activation control circuit (extraction module) or the gating circuit calculates a target channel activation degree or selects a channel from the time shared channel data. The features detection layers and the feature integration layers form a set of processing channels at a plurality of resolutions or scale levels as a whole.** Each processing channel implements processing at one scale level or resolution **to detect and recognize low- to high-order features** (paragraphs 182, 183, and 267, lines 1, and 2).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to selectively active a channel (extracting module) as taught by Matsugu (537) in Mori et al., in view of Matsugu (775), because that would dramatically improve an information processing capability for detecting patterns (paragraph 42).

Claim 14 further teaches a computer readable storage medium ("computer software…storage medium"; Matsugu (775), paragraphs 4, and 92).

Regarding claim 3, Mori et al in view of Matsugu (775), further in view of Matsugu (537) further disclose that in the first or second feature extraction step, a feature obtained by performing a predetermined transformation to a predetermined feature is extracted (Mori et al; see para [0057]).

Regarding claim 4, Mori et al in view of Matsugu (775), further in view of Matsugu (537) further disclose a re-extraction step of re-extracting a feature of a lower layer on the basis of a feature extraction result of a higher layer in the second feature extraction step (Mori et al; see para [0056]- [0058]).

Regarding claim 5, Mori et al in view of Matsugu (775), further in view of Matsugu (537) further disclose that in the analysis step, a distribution of each of a plurality of feature extraction results is analyzed, and a relative relationship between analytical results is analyzed (Mori et al; see para [0053], [0061]).

Regarding claim 6, Mori et al in view of Matsugu (775), further in view of Matsugu (537) further disclose that in the analysis step, a distribution within a specific range of at least one of a plurality of feature extraction results is analyzed (Mori et al; see para [0053], [0061]).

Regarding claim 7, Mori et al in view of Matsugu (775), further in view of Matsugu (537) further disclose that in the analysis step, whether the feature is extracted or not extracted within a predetermined range in a distribution of at least one of a plurality of feature extraction results is analyzed (Mori et al; see para [0053], [0061]).

Regarding claim 9, Mori et al in view of Matsugu (775), further in view of Matsugu (537) further disclose that in the analysis step, a size of a range within which the feature is extracted or not extracted in a distribution of at least one of a plurality of feature extraction results is analyzed (Mori et al; see para [0053], [0061]).

Regarding claim 10, Mori et al in view of Matsugu (775), further in view of Matsugu (537) further disclose that in the analysis step, a likelihood of at least one of a plurality of feature extraction results or a total of feature detection levels is analyzed (Mori et al; see para [0061]).

Regarding claim 11, Mori et al in view of Matsugu (775), further in view of Matsugu (537) further disclose that the pattern identification is performed on the presence/absence of a face image contained in the input data (see para [0078] - [0079]).

Regarding claim 12, Mori et al in view of Matsugu (775), further in view of Matsugu (537) further disclose that the pattern identification is performed on a position of a face image contained in the input data (Mori et al; see para [0079]).

Regarding claim 15, Mori et al in view of Matsugu (775), further in view of Matsugu (537) further disclose that a second feature extraction step of extracting a feature of a second layer higher than the first layer by one on the basis of a feature

extraction result in the first layer and a feature extraction result in a layer other than the first layer (Mori et al; see para [0056]- [oo57]).

Regarding claim 16, Mori et al in view of Matsugu (775), further in view of Matsugu (537) further disclose that the layer other than the first layer is a layer lower than the first layer (Mori et al; see para [0056] - [0057]).

Regarding claim 17, Mori et al in view of Matsugu (775), further in view of Matsugu (537) further disclose that the layer other than the first layer is the second layer (Mori et al; see para [0056] - [0057]).

Regarding claim 18, Mori et al in view of Matsugu (775), further in view of Matsugu (537) further disclose that an integrating step of integrating feature extraction results by a plurality of feature extractors in the same layer (Mori et al; see para [0053]).

5. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Mori et al.(US PAP 2002/0181765) in view of Matsugu (US PAP 2002/0181775), further in view of Badique (US Patent 5,570,434); and further in view of Matsugu (EP 1164537).

Regarding claim 8, Mori et al. in view of Matsugu (775), further in view of Matsugu (537) do not specifically teach a barycenter of a distribution of at least one of a plurality of feature extraction results is analyzed. However this feature is well known in

the art as indicated by Badique. Badique discloses a face recognition method that analyzes the distribution of features (see col. 9, line 63 - col. 10, line 4). It would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize a barycenter of a distribution of the features for the benefit of enabling the recognition of the mouth and eyes (see col. 2, lines 49- 51).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to LEONARD SAINT CYR whose telephone number is (571) 272-4247. The examiner can normally be reached on Mon- Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richemond Dorvil can be reached on (571) 272-7602. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at (866) 217-9197 (toll-free). If you would like assistance from a

USPTO Customer Service Representative or access to the automated information

system, call (800) 786- 9199 (IN USA OR CANADA) or (571) 272-1000.

LS

01/31/10

/Leonard Saint-Cyr/
Examiner, Art Unit 2626